



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/006,373	10/29/2001	Hiroshi Sasaki	01697/LH	1645

1933 7590 11/29/2005

FRISHAUF, HOLTZ, GOODMAN & CHICK, PC
220 5TH AVE FL 16
NEW YORK, NY 10001-7708

EXAMINER

FINEMAN, LEE A


ART UNIT

PAPER NUMBER

2872

DATE MAILED: 11/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/006,373	Applicant(s) SASAKI ET AL. 	
	Examiner Lee Fineman	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 28-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to an amendment filed 12 September 2005 in which claims 10-27 were cancelled and claims 28-39 were added. Claims 28-39 are pending.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 28-32 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schoeppe et al., U.S. Patent No. 6,167,173 in view of Lee, U.S. Patent No. 4,449,821.

Regarding claims 28 and 34, Schoeppe et al. disclose a laser microscope (fig. 1), which irradiates a sample (5) with a laser light (from 13.2) including laser lines of different emission wavelengths comprising: a light source (13.2) to emit the laser light; a spectral resolution section (21) to spectrally resolve the laser light into lights of different emission wavelengths (column 4, lines 3-4, the filter wheel or filter slide spectrally resolve at least a portion of the light); a monitoring diode/light receiving element (19) to output a detection signal that includes light intensity information of the lights (column 4, lines 1-7), and a controller (36, 34) configured to receive an output signal of the diode and control light intensities of the respective laser lines based on the detection signal (column 4, lines 1-19). Schoeppe et al. disclose the claimed invention except for the light receiving element being an array that simultaneously receives lights of different emission wavelengths; wherein said light receiving element array comprises

Art Unit: 2872

either one of a split photodiode and a solid-state image sensing device; and wherein the controller simultaneously controls the light intensities. Lee teaches a system (fig. 1) with a light receiving element array (6) which includes a split photodiode detector and a control system (2) which is configured to receive the output signal of said light receiving element array and simultaneously control setting the respective light intensities of the lines of different emission wavelengths included in said laser light to be constant (column 4, line 43-column 5, line 45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace light receiving element array and controller of Schoeppe et al. with that of Lee to provide faster corrections of light variation in the system.

Regarding claims 29 and 30, Schoeppe et al. further disclose an acousto-optical element (AOTF within 13.2), fixed to an output end of the laser source (fig. 1) to alter the light intensities of the laser lines, wherein the acousto-optical element receives a control signal output from the controller (column 4, lines 4-19); wherein the controller controls the acousto-optical element to control the respective light intensities of the laser lines to be constant (column 4, lines 1-19).

Regarding claim 31, Schoeppe et al. further disclose wherein the light source (13.2) comprises one laser light source that emit laser light of different emission wavelengths (column 3, line 20; the multiple-wavelength laser).

Regarding claim 32, Schoeppe et al. further disclose wherein the light source (13.2) comprises a plurality of laser light sources that emit laser light of different emission wavelengths (column 3, line 20; single-wavelength and multiple-wavelength lasers).

Art Unit: 2872

3. Claims 35, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schoeppe et al. in view of Lee, as applied to claim 28 above, and further in view of Eastman et al., U.S. Patent No. 5,684,582.

Schoeppe et al. in view of Lee, as applied to claim 28 above further disclose an optical fiber (14.2) to transmit the laser light from the laser source (fig. 1); a collimator lens (16, Schoeppe) configured to collimate said laser light guided by the optical fiber; and a beam splitter (18) configured to split the laser light collimated by the collimator lens and guide a part of the split laser light to the spectral resolution section. Schoeppe et al. in view of Lee, as applied to claim 28 above disclose the claimed invention except for a converging lens disposed between said spectral resolution section and said light receiving element array and configured to converge the lines of different emission wavelengths; and wherein the spectral resolution unit comprises a prism. Eastman et al. teaches spectral resolution unit (fig. 1) including a prism (column 4, lines 6-7) and a converging lens (66). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the converging lens of Eastman et al. to the system of Schoeppe et al. in view of Lee to prevent stray light or to be able to image the light. Also, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the spectral resolution section of Schoeppe et al. in view of Lee with that of Eastman et al. to provide faster resolving of the wavelengths with no moving parts. Further, regarding claim 37, the monitoring section of Schoeppe et al. in view of Lee, which includes the collimator lens, the beam splitter, the spectral resolution section, the light receiving element array, and the converging lens from Eastman et al. are formed into one block (within the scanning unit of the

Art Unit: 2872

microscope), and the block is constituted to be attachable/detachable with respect to a main body (M) of the laser microscope.

4. Claims 33, 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schoeppe et al. in view of Lee, as applied to claim 28 above, and further in view of Goix, International Patent Publication No. WO 98/57152.

Schoeppe et al. in view of Lee, as applied to claim 28 above further disclose wherein the microscope detects fluorescent lights emitted from the sample by the emission wavelengths of the laser lines of the laser light (column 3, line s49-52). Schoeppe et al. in view of Lee, as applied to claim 28 above disclose the claimed invention except for the spectral resolution section comprising one of a prism, a diffraction grating or a beam splitter; and is silent to wherein the sample is marked with fluorescent markers, the emission wavelengths of the laser lines of the laser light are suitable to cause the marked sample to emit a plurality of fluorescent lights; and wherein the sample is dyed with a plurality of fluorescent indicators, and the emission wavelengths of the laser lines are excitation wavelengths of the fluorescent indicators. Goix teaches a laser microscope system (fig. 3C) with a monitoring system that includes a spectral resolution section (313), which is a diffraction grating, configured to spectrally resolve light into the lines of different emission wavelengths (page 7, lines 24-27); and a light receiving element array (315). It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace spectral resolution section of Schoeppe et al. in view of Lee with that of Goix to provide faster resolving of the wavelengths with no moving parts. Goix further teaches in column 3, lines 36-41 that it is very well known to mark a sample with fluorescent

Art Unit: 2872

markers, including dyes, to provide fluorescence of a sample. It would have been obvious to one of ordinary skill in the art at the time the invention was made to prepare the sample of Schoeppe et al. in view of Lee with fluorescent markers as suggested by Goix as it is a reliable, commonly available method of creating the fluorescence of the sample.

Response to Arguments

5. Applicant's arguments with respect to claims 28-39 have been considered but are moot in view of the new ground(s) of rejection.

6. Applicant's arguments filed 12 September 2005 regarding the reference Lee have been fully considered but they are not persuasive.

In response to applicant's argument that Lee does not teach controlling the light intensities of respective laser lines in the manner of the present invention (see remarks page 10, paragraphs 2 and 3), the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In the instant case, Lee suggests using a split photodiode detector and a controller to simultaneously measure light and then simultaneously control the light source to maintain constant light emission lines, which would provide faster corrections of light variation in the system of Schoeppe et al. Therefore the rejection is appropriate.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (571) 272-2313. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2872

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



LAF
November 23, 2005


MARK A. ROBINSON
PRIMARY EXAMINER